NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

REGULATING WATER IN DRAINAGE SYSTEMS
(acre)

CODE 554

DEFINITION

Controlling the removal of surface or subsurface runoff, primarily through the operation of water-control structures.

SCOPE

This standard is applicable to the regulation of surface and subsurface water outflow through drainage systems. This frequently requires other allied practices (see "Design Criteria").

PURPOSE

To conserve surface or subsurface water by controlling the outflow from drainage systems to maintain optimum soil moisture conditions. Such conservation of water will make it possible to:

1. Establish and encourage the growth of desired field or forest plants.
2. Reduce subsidence and wind erosion of organic soils, and
3. Hold water in channels in forest areas to act as ground-fire breaks and provide drinking water for wildlife and a resting and feeding place for waterfowl.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to areas where drainage is needed during certain periods and where it is advantageous to limit the outflow or pumping rate at other times. This practice is especially applicable in organic soils and in highly permeable soils of low available water capacity.

Regulation of outflow shall be undertaken only if soil water salinity or alkalinity is not likely to be a problem.

DESIGN CRITERIA

The water management system must have the depth, spacing, and capacity to provide the necessary drainage relief for the plants when controls are open. Control of outflow shall be by structures or pumps capable of removing the design flow or of regulating water stages in the drainage system. The outflow controls shall be related to the amount of water available and the degree of control necessary for soil and plant requirements.
The design of related water management practices will need to be coordinated with this practice for it to achieve its intended purpose.
For crops that are highly sensitive to excessive and inadequate soil water conditions, the field surfaces must be smooth, and the distance between the soil water level and the ground surface must be as uniform as practical. Fields shall be smoothed or graded, as required, to achieve this uniformity. Structures and pumps shall be located where they are accessible and subject to convenient control.

PLAN OF OPERATION

A plan of operation shall be prepared for the system that will insure that the objectives are met. The plan of operation shall include such information as time and stage to hold water in ditches, pumping schedules, and coordination of water management operations in the system with rainfall, season and crop and soil moisture needs.

PLANS AND SPECIFICATIONS

Plans and specifications for regulating water in drainage systems shall be in keeping with this standard and shall describe the requirements for properly installing and operating the practice to achieve its intended purpose.

NRCS - Minnesota
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